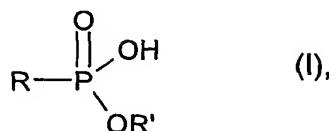


What is claimed is:

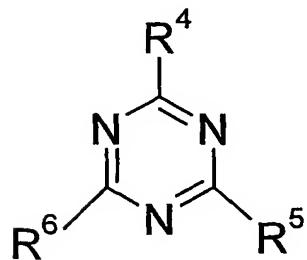
1. A flame retardant comprising

A. at least one metal or metalloid salt of a phosphonic acid of formula I

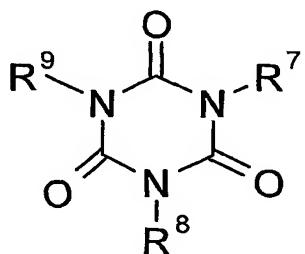


wherein R is hydrogen, C₁-C₁₈alkyl, C₅-C₆cycloalkyl, C₂-C₆alkenyl, C₆-C₁₀aryl or C₇-C₁₁aralkyl and R' is hydrogen, C₁-C₈alkyl, C₆-C₁₀aryl or C₇-C₁₁aralkyl, the substituents R and R' that are other than hydrogen being unsubstituted or substituted by halogen, hydroxyl, amino, C₁-C₄alkylamino, di-C₁-C₄alkylamino, C₁-C₄alkoxy, carboxy or C₂-C₅alkoxycarbonyl; and the metal or metalloid is from Group IA, IB, IIA, IIB, IIIA, IVA, VA or VIII of the Periodic Table; and

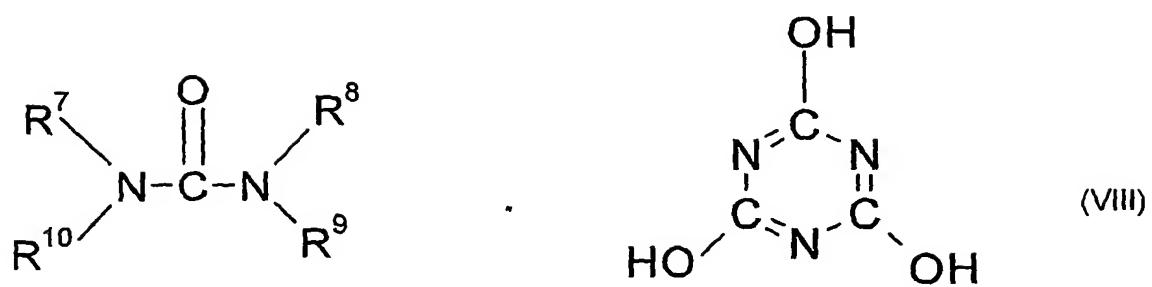
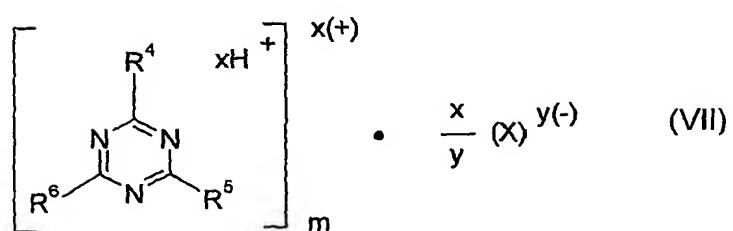
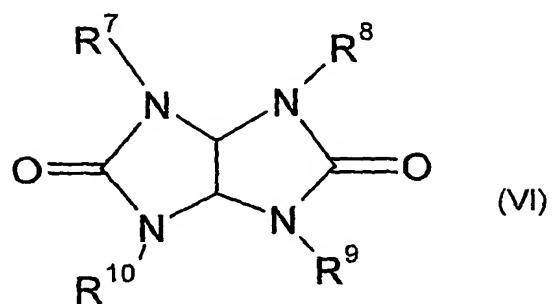
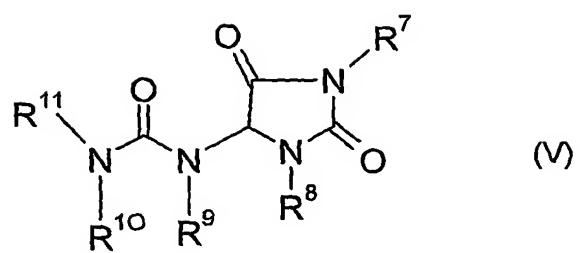
B. at least one nitrogen-containing flame retardant component of formulae III to VIIa

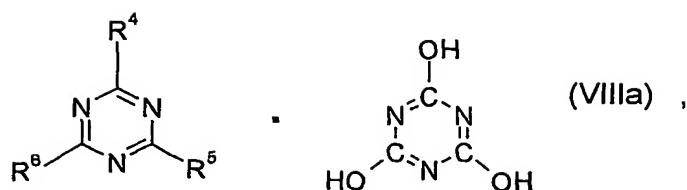


(III)



(IV)





wherein

R⁴ to R⁶ are each independently of the others hydrogen, C₁-C₈alkyl, C₅-C₆cycloalkyl or C₁-C₄alkyl-C₅-C₆cycloalkyl, each unsubstituted or substituted by a hydroxy or a C₁-C₄-hydroxyalkyl group; C₂-C₈alkenyl, C₁-C₈-alkoxy, -acyl, -acyloxy, C₆-C₁₂aryl, -O-R² or -N(R²)R³, and R² and R³ are hydrogen, C₁-C₄alkyl, C₅-C₆cycloalkyl, C₂-C₈alkenyl, C₁-C₄hydroxyalkyl or C₆-C₁₂aryl, with the proviso that R⁴ to R⁶ are not simultaneously hydrogen and also, in formula III, not simultaneously -NH₂, and in formula VII at least one group is present which is capable of adding a proton,

R⁷ to R¹¹ indicate the same groups as R⁴ to R⁶ with the exception of the substituent -N(R²)R³, X is the anion of a protonic acid, x is the number of protons transferred from the latter to the triazine compound and y is the number of protons abstracted from the protonic acid;

or ammonium polyphosphate, a melamine ammonium phosphate, melamine ammonium polyphosphate, melamine ammonium pyrophosphate, a condensation product of melamine or/and a reaction product of melamine with phosphoric acid or/and a reaction product of a condensation product of melamine with phosphoric acid or a mixture thereof.

2. A flame retardant according to claim 1, wherein R is C₁-C₄alkyl which is unsubstituted or substituted by from 1 to 3 halogen atoms or/and hydroxyl groups, and R' is hydrogen or C₁-C₄alkyl.

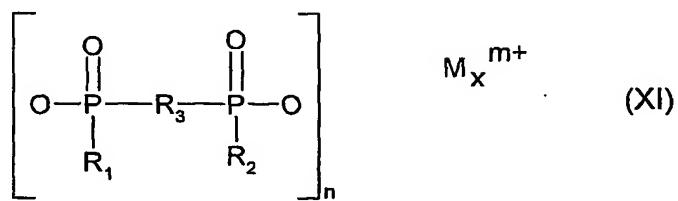
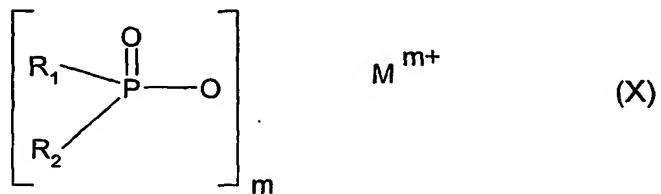
3. A flame retardant according to claim 1, wherein the metal or metalloid is Na, K, Mg, Ca, Ba, Zn, B, Al, Cu, Fe, Sn or Sb.

4. A flame retardant according to claim 1, wherein component B is at least one compound of formulae VII or/and VIIIa or/and ammonium polyphosphate, a melamine ammonium polyphosphate, melamine ammonium pyrophosphate, a condensation product of melamine or/and a reaction product of melamine with phosphoric acid or/and a reaction product of a condensation product of melamine with phosphoric acid or/and a mixture thereof.

5. A flame retardant according to claim 1, wherein component B is benzoguanamine, tris(hydroxyethyl) isocyanurate, allantoin, glycoluril, melamine cyanurate, melamine phosphate, dimelamine phosphate, melamine pyrophosphate, urea cyanurate, ammonium polyphosphate, melamine polyphosphate, melamine borate, melamine ammonium polyphosphate or melamine ammonium pyrophosphate.
6. A flame retardant according to claim 1, wherein component B is a condensation product of melamine from the series melem, melam, melon and/or a higher condensed compound.
7. A flame retardant according to claim 1, wherein component B is a reaction product of melamine with phosphoric acid and/or a reaction product of a condensation product of melamine with phosphoric acid or a mixture thereof.
8. A flame retardant according to claim 7, wherein component B is dimelamine pyrophosphate, melamine polyphosphate, melem polyphosphate, melam polyphosphate and/or a mixed polysalt of that type.
9. A flame retardant according to claim 1, comprising a further flame-retarding component C.
10. A flame retardant according to claim 9, wherein component C is at least one flame-retarding active ingredient from the classes of antimony compounds, metal oxides or hydroxides, nanocomposites, mineral earths, modified mineral earths, organic or inorganic silicon compounds, titanates, zirconates, metal borates, phosphorus compounds, sterically hindered alkoxyamine compounds and/or organohalogen compounds.
11. A flame retardant according to claim 10, wherein component C is at least one flame-retarding active ingredient from the classes of antimony compounds, sterically hindered alkoxyamine compounds, phosphorus compounds or/and organohalogen compounds.
12. A flame retardant according to claim 11, wherein component C is at least one phosphate, phosphate ester, phosphonate, phosphinate, phosphine, phosphine oxide, phosphite or/and phosphazene.

13. A flame retardant according to claim 11, wherein component C is a metal salt of an alkylphosphinic acid ester or a salt of the latter with melamine or with a condensation product of melamine.

14. A flame retardant according to claim 13, wherein component C is at least one phosphonite of formulae X or/and XI,



wherein

R_1 and R_2 , which are the same or different, are $\text{C}_1\text{-}\text{C}_6$ alkyl, especially $\text{C}_1\text{-}\text{C}_4$ alkyl, or $\text{C}_6\text{-}\text{C}_{10}$ aryl;

R_3 is $\text{C}_1\text{-}\text{C}_{10}$ alkylene, $\text{C}_6\text{-}\text{C}_{10}$ -arylene, -alkylarylene or -arylalkylene;

M is magnesium, calcium, aluminium or zinc, melamine or a condensation product of melamine,

m is 1, 2 or 3;

n is 1 or 3 and

x is 1 or 2.

15. A composition comprising

- a) a synthetic polymer and
- b) at least one flame retardant defined in any one of claims 1 to 14.

16. A composition according to claim 15, wherein component a) is a thermoplastic polymer.

17. A composition according to claim 16, wherein the thermoplastic polymer is high-impact polystyrene (HIPS), expandable polystyrene (EPS), expanded polystyrene (XPS), polyphenylene ether (PPE), polyamide, polyester, polycarbonate or a polymer blend of the type ABS (acrylonitrile-butadiene-styrene) or PC/ABS (polycarbonate/acrylonitrile-butadiene-styrene) or PPE/HIPS (polyphenylene ether/high-impact polystyrene).
18. A composition according to any one of claims 15 to 17, comprising a filler or a reinforcing agent.
19. A composition according to claim 15, comprising an additional additive.
20. A composition according to claim 19, comprising, as additional additive, an antioxidant, a processing stabiliser, a light stabiliser, a metal deactivator, a hydroxylamine, a thiosynergistic compound, a copper salt, a nucleating agent, a filler, a reinforcing agent, a pigment or/and an antistatic.
21. A composition according to claim 20, comprising, as light stabiliser, a UV absorber or/and a light stabiliser from the class of sterically hindered amines.
22. The use of a flame retardant defined in any one of claims 1 to 14 for imparting flame-resistant properties to a synthetic polymer.
23. A method of imparting flame-resistant properties to a synthetic polymer, wherein at least one flame retardant defined in any one of claims 1 to 14 is incorporated in the synthetic polymer or is applied to the surface thereof.